

We Claim:

1. A pigment product comprising kaolin having a particle size distribution such that at least about 85% by weight of the particles have an equivalent spherical diameter less than about 2 μm , and from about 10% to about 20% by weight of the particles have an equivalent spherical diameter less than about 0.25 μm , the particles have a shape factor in the range of from about 20 to about 40, and the particles have a particle steepness of greater than about 32, wherein said kaolin is derived from a crude secondary kaolin.
2. The pigment product according to claim 1, wherein said crude secondary kaolin is obtained from the Para State region of Brazil.
3. The pigment product according to claim 1, wherein from about 85% to about 95% by weight of the particles have an equivalent spherical diameter less than about 2 μm .
4. The pigment product according to claim 1, wherein from about 87% to about 93% by weight of the particles have an equivalent spherical diameter less than about 2 μm .
5. The pigment product according to claim 1, wherein from about 14% to about 18% by weight of the particles have an equivalent spherical diameter less than about 0.25 μm .
6. The pigment product according to claim 1, wherein the shape factor of the particles is in the range of from about 20 to about 36.
7. The pigment product according to claim 1, wherein the shape factor of the particles is in the range of from about 23 to about 33.
8. The pigment product according to claim 7, wherein the shape factor of the particles is in the range of from about 26 to about 30.
9. The pigment product according to claim 8, wherein the shape factor of the particles is in the range of from about 28 to about 30.
10. The pigment product according to claim 1, wherein the steepness of the particles is in the range of from about 32 to about 40.
11. The pigment product according to claim 1, wherein the steepness of the particles is in the range of from about 35 to about 39.
12. The pigment product according to claim 1, wherein the steepness of the particles is in the range from about 36 to about 38.
13. The pigment product according to claim 1, wherein said kaolin is made by a method comprising:
 - (a) mixing an unfractionated kaolin clay with water to form an aqueous suspension;
 - (b) combining a coarse kaolin fraction with said aqueous suspension, said coarse kaolin fraction having in the range of about 20% to about 40% by weight particles smaller than about 2 microns;
 - (c) attrition grinding said aqueous suspension such that the average shape factor of the kaolin clay is increased by at least about 10;

(d) classifying the resultant suspension of ground kaolin clay to obtain a pigment product therefrom.

14. A method of making a pigment product comprising a steep, platy kaolin having a particle size distribution such that at least about 85% by weight of the particles have an equivalent spherical diameter less than about 2 μm and from about 15% to about 20% by weight of the particles have an equivalent spherical diameter less than about 0.25 μm , the particles have a shape factor in the range of from about 20 to about 36, and the particles having a particle steepness in the range of about 35 to about 40, the method comprising:

- (a) mixing an unfractionated secondary kaolin clay with water to form an aqueous suspension;
- (b) combining a coarse kaolin fraction with said aqueous suspension;
- (c) attrition grinding said aqueous suspension such that the average shape factor of the kaolin clay is increased by at least about 10;
- (d) classifying the resultant suspension of ground kaolin clay to obtain a pigment product therefrom.

15. A method according to claim 14, wherein said coarse kaolin fraction has previously been ground and classified to reduce its content of agglomerated fine kaolin particles and to partly delaminate the kaolinite stacks.

16. A method according to claim 14, wherein said coarse kaolin has been prepared by:

- (a) mixing a raw or partially processed kaolin clay with water to form an aqueous suspension;
- (b) attrition grinding said aqueous suspension;
- (d) classifying the resultant suspension of ground kaolin clay to obtain a coarse fraction therefrom.

17. A method according to claim 16, wherein said attrition grinding occurs in multiple stages (18).

A method according to claim 14, wherein in (c), the average shape factor is increased by at least about 15.

19. The method according to claim 14, wherein the aqueous suspension is further treated with a water soluble bleaching agent.

20. A coating composition for use in producing gloss coatings on paper and other substrates, wherein said composition comprises an aqueous suspension of a particulate pigment and an adhesive, wherein the particulate pigment comprises the pigment product according to claim 1.

21. A composition according to claim 20, wherein the solids content of the composition is greater than about 60% by weight of the composition.

22. A coating composition for use in producing gloss coatings on paper and other substrates, wherein said composition comprises an aqueous suspension of a particulate pigment and

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an adhesive, wherein at least about 80% by weight of the particulate pigment comprises the pigment product according to claim 1.

23. A composition according to claim 20, wherein the adhesive comprises a modified or unmodified starch.
24. A composition according to claim 20, wherein the adhesive comprises a binder other than starch.
25. A method of forming a gloss coating on paper, comprising coating the paper with a composition according to claim 20 and calendering the paper to form a gloss coating thereon.